

Indian Rose Annual - IRA 1986

First steps in Rose Hybridization with *Rosa Clinophylla* (*ROSA INVOLUCRATA*)

M.S. Viraraghavan

For sometime now, the prospect of breeding an entirely new strain of rose with the genes of *Rosa clinophylla* (*R. involucrata*) has fascinated hybridisers in India. This is for the simple reason that this species, native to the plains of Bengal and adjacent areas, is probably the only rose species in the entire world that is found in the tropical regions, and as such, hopefully carries the genes for heat resistance. Prima facie, this species should also have resistance to water logging as it is normally found near streams and marshy places. In fact, the clone which is now with me was collected by Mr. Narender Singh of Ranchi from the dense clumps of the rose, growing wild with their roots partially in the stream bed of a stream in a forest near Ranchi (Chota Nagpur Plateau, Bihar, now Jharkhand State).

According to the classification in the 'Chromosome Atlas' of flowering Plants by C.D. Darlington and A.P.Wylie, *Rosa clinophylla* is part of sub-genus *Bracteata* within the sub-genus being confined to two species, *Rosa clinophylla* and *Rose bracteata*. The latter, also referred to as the Macartney Rose, is native of Southern China and Northern Burma, and is found in similar very moist situations by the sides of streams etc..

From the material sent by Mr. Narender Singh, attempts to propagate *R. clinophylla* were made in two ways, one by cutting and the other by budding on to stocks of *Rosa multiflora*. Propagation by cuttings was not successful but budding on to *R. multiflora* produced approximately 40% take. The budded plants grew away quite rapidly and now, after two years, are well over 6' tall, with an upright moderately branching habit.

The plant has a close resemblance to the bramble (raspberry) as was long ago observed by Firminger in his complete Gardening in India. A distinctive feature is the brown mottled bark, curiously similar to the mottling found on some types of snakes. Flowering on the budded plants started in spring (April in Kodaikanal) of the second year after they were planted down in the ground. The flowers are single, with five petals, white, with fairly thin substance. The most attractive feature is the bright golden yellow stamens, which, when dehiscing, have a characteristic fragrance of acetone (like nail polish remover) – which characteristic it shares with *Rosa bracteata*.

In general, this rose in Kodaikanal closely conforms to the description in Dr.B.P.Pal's book, "The Rose In India" - 'A stout, erect or semi-climbing shrub, flowers white, borne singly or in clusters, fruits roundish, hairy and pale.' The flowering continues for a long period, with peak flowering in April and May, and scattered flowers thereafter. It may be said to be almost continuous flowering although not, unfortunately, to the same extent as *R. bracteata*. Also, this species is quite susceptible to both mildew and black spot, whereas *R. bracteata* is not affected to the slightest degree by either of these two diseases.

The foliage is light green, deeply veined with 5-7 leaflets, with the apex leaflet considerably elongated, oblong to oblong / lanceolate in shape. The foliage is shining above and glabrous beneath. The curious involucre (i.e groups of bracts enveloping the young inflorescences) are

another feature by which this species can easily be recognized. Again there is a close resemblance here to *R. bracteata*. Under Kodaikanal conditions the hips take a very long time to mature-nearly six months, as against the normal four months for the Hybrid Teas. Each hip contains from 5-10 fairly small seed.

Rosa clinophylla is a diploid with 14 chromosomes, unlike modern roses which are tetraploid (28 chromosomes). Any programme of breeding with this species has, therefore, to take into account the difference in chromosome number. Fortunately, the Tea roses which are quite fertile, under Kodaikanal conditions, are also diploid and are the obvious choice for breeding work with this species. Experience shows that when working with specie roses, it is easier to use the species as the male or pollen parent and this principle was followed during the first year, 1985, when two series of crosses were attempted with *R. clinophylla* as the male parent. The first group of crosses was with the pink tea rose, Mrs. B. R. Cant (?) which bears abundant self hips under Kodaikanal conditions, with a pale cream Tea rose, Mme Hoste (?), and the climbing white tea Noisette, Lamarque. The second series of crosses with *R. clinophylla* as the male parent was done using some very fertile standard tetraploid roses including Little Darling (FI), Queen Elizabeth, Independence and Lover's Meeting.

The results, as could probably have been anticipated, were quite disappointing with no seeds at all from the large number of crosses with Lamarque, and with Mrs.Hoste. A few were sown in September 1985 but they have not sprouted to date - October 1986. Of the crosses with the tetraploids, the cross with Little Darling produced fairly good seed set, there was also some seed set with the crosses with Queen Elizabeth and Independence; through Lover's Meeting was a complete failure. Seeds from these crosses, sown in October 1985, have not yet sprouted and the prospect of sprouting now seems remote.

Attempts were also made to use *R. clinophylla* as the seed parent with pollen from *R. bracteata*, on the logic that the two are closely related and so the cross should be easy. Out of a large number of crosses there was a fair percentage of success and to date, six seedlings have sprouted but not yet flowered. Looking at the seedlings, it would appear that at least two or three may be genuine crosses as the foliage looks nearer to *R. bracteata* than to *R. clinophylla*, but we can reach firm conclusions only after the first flowering, which hopefully should be in the spring of 1987.

During 1986, with the *R. clinophylla* plants having grown much bigger and stronger, the same breeding strategy more or less was adopted. With *R. clinophylla* as pollen parent a large number of crosses were made with several Tea roses, including Mme. Hoste (?), Mrs. B. R. Cant (three different clones with probably one at least being a different variety altogether), with a buff coloured tea, Safrano (?) and with two climbing Tea roses, one a cream with pink edges Gloire de Dijon (?) and the other light lemon yellow - Celine Forestier; as also with the diploid polyantha Tea, Celine Brunner. For the second year running, Mme Hoste refused to oblige and of the three variants of Mrs. B. R. Cant, good seed was set by only one – a very large number of crosses with Cecile Brunner successful. A few seeds came with the cross with Gloire de Dijon (?) but none from Celine Forestier.

With tetraploid seed parents the crosses were repeated using Little Darling with some success, and a fair number of seeds have been harvested to date. Naturally results will have to wait for sowing time which will be only later in the year.

Reverse crosses using *R. clinophylla* as the seed parent and *R. bracteata* as the pollen parent were repeated. There has been appreciable take but the hips are yet to be harvested (October 1986).

As would be evident from what has been described above, breeding work with *R. clinophylla* is not going to be easy. It is quite disappointing that the Tea roses should be so reluctant to set seed with *R. clinophylla*. A success with this strategy would have made progress much easier. But perhaps one of the few seeds from the 1986 Tea crosses will sprout? With a bit of luck maybe a few seeds with Little Darling as the seed parent should also germinate. While I do not intend to give up perhaps the work requires a younger rose breeder (in his '20s) or a research institution.

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* Hillview, Ferozshah Road, Kodakanal 624101 Tamil Nadu

Multiflora. Propagation by cuttings was not successful but budding on to *R. Multiflora* produced approximately 40% take. The budded plants grew away quite rapidly and now, after two years, are well over 6' tall, with an upright moderately branching habit.

The plant has a close resemblance to the bramble (raspberry) as was long ago observed by Firminier in his *Complete Gardening in India*. A distinctive feature is the brown mottled bark, curiously similar to the mottling found on some types of snakes. Flowering on the budded plants started in spring (April in Kodaikanal) of the second year after they were planted down in the ground. The flowers are single, with five petals, white, with fairly thin substance. The most attractive feature is the bright golden yellow stamens, which, when dehiscing, have a characteristic fragrance of acetone (like nail polish remover) - which characteristic it shares with *Rosa Bracteata*.

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Love's Meeting & Priyatama : H.T. (M. S. Viraraghavan, 1985)
A Duorosecent orange variety; still under trial.



Independence & Kanchi : Fl. (M. S. Vinasubramanian, 1985). An attractive H. T. type floribunda with beautifully shaped clear red blooms. To be released by K. S. G. Sreenivasulu Reddy in 1987.



Cover Illustrations:

ROSE ABHAYA '87 (H.T.), M. S. VIRARAGHAVAN
A VARIETY IN THE HAND PAINTED STRAIN